however, that there is a possibility that the variety found off the Virginia coast, where Ryder made his observations, may show viviparity; but this is hardly likely to be the case.

Two possible explanations suggest themselves. Either Ryder dealt with another species, which he considered to be *F. majalis,* or he mistook for ovarian embryos some of the latter that had been eaten by the female under observation and had passed through the alimentary canal undigested. These fish have been observed to eat large numbers of their own eggs. The latter may pass through the alimentary canal without suffering the loss of anything but the gelatinous envelope. The embryos, however, that have passed through this experience are always dead. It seems scarcely likely that so excellent an observer as Ryder should have been led into a mistake of this sort; yet this appears to be the most likely explanation of the discrepancy.

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DEVICES FOR CHANGING THE TIMBRE OF MUSICAL INSTRUMENTS

ENCLOSED is a rough sketch of a curious bridge, used on a Hindu stringed instrument, whose strings are picked. Fig. 1 shows top of bridge, and Fig. 2 an end view. There is a slight ridge near the lower side. Five grooves

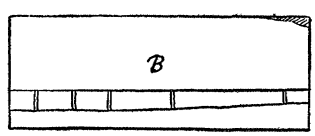

FIG. 1

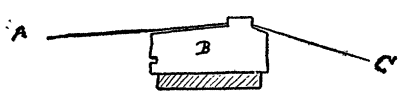

FIG. 2

are cut on this ridge for as many wire strings, whose relative position with the bridge is shown in Fig. 2. *A* represents the vibrating part of the string; *C* the part attached to the tail piece. The vibrations of the string against the bridge produce a burring sound, which seems to be favored by the orientals.

In the "ti-tzu," a Chinese transverse flute, there is a hole, about the same size as the mouth-hole, half-way between the latter and the upper finger-hole, which is covered with a thin tissue, making a sympathetic drum, which changes the reedy timbre of the flute.

In a bamboo horn of the Filipinos, the lower end of the bamboo is split into strips about three eighths of an inch wide, producing a similar sound or result.

In Africa, the negro xylophones, marimbas, those that have a gourd resonator suspended beneath each sounding bar, have some of the gourds perforated and covered with a thin piece of cocoon, thus forming a sympathetic drum, and likewise changing the timbre of the instrument.

Would not such instruments have anything but a soothing effect on the nerves of our musicians? But it was not always so. According to Mersenne, the beginning of the seventeenth century saw bands of four or five all playing on onion flutes, which met with great favor all through western Europe. This flute consisted of a straight wooden conical tube, with conical bore, the mouth hole on the side, and the open, small end of the tube covered with a thin skin of an onion; hence the name. The player sung or hummed the tune into the instrument, which resembled our modern kazoo or zobo, the change of timbre due to onion skin being pleasing at that period.

I have just come across the following article by A. C. Moule in the North China branch of the Royal Asiatic Society, 1908, page 78:

> Rev. F. W. Galpin, of England, informs me that the device of covering a hole with membrane was not characteristic of the English recorder, as is sometimes stated; but that in the early part of the eighteenth century a transverse flute, called the *voice flute,* was produced in London with a membrane exactly like that of the Ti (the ti-tzu).

An advertisement of "a rare concert of four trumpets marine, never before heard in England," appeared in the London *Gazette,* of February 4, 1674. Some authors claim that

this was the first bowed instrument in Europe. It had a peculiar bridge, one foot of which was much longer than the other, as the former had to pass through a hole in the belly and rest on the back (inside) of the instrument; the shorter foot rested on the belly. The one string which it boasted rested on the bridge directly over the long foot. The result was that the vibrations of the string caused the short foot of the bridge to beat the belly. Often, to prevent wear, that portion of the belly receiving the beating was inlaid with a plate of bone or metal. The marine trumpet was quite common in Germany, being called marien Trompet, also Nonnengeige, the latter because nuns used it in the trumpet parts of their devotions.

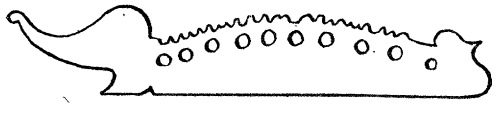

Fig. 3

Fig. 3 represents a nut found on several Hindu stringed instruments, on exhibition in this museum. I believe that they are used in connection with their musical scale, in which the lowest note is that of the elephant, and the highest that of the peacock.

I should like to know if any one has expressed a theory about either the bridge or nut.

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Smithsonian Institution

THE PICKENS COUNTY METEORITE

The stone-iron meteorite here described was sent to the office of the state geologist about eighteen months ago from Pickens County, Ga., together with a number of minerals and rock specimens, for identification. A rather extensive inquiry through correspondence and even a personal visit to Pickens County has, so far, given no definite information as to the exact locality from which the meteorite was obtained.

When first seen, the specimen, which weighed fourteen ounces, was roughly cubical in shape and had the appearance of being a part of a larger piece. Five of the faces of the irregular cube showed comparatively fresh surfaces, while the sixth side was more or less oxidized and showed a somewhat pitted condition, as if it was an original surface. In color and texture it closely resembles basalt, the dark color being blotched here and there by brownish-red spots, which seem to be due to the oxidation of the contained particles of metallic iron. With the exception of the metallic iron, which occurs in irregular masses a fourth of an inch or less in diameter, and which makes up something like ten per cent. of the entire mass, none of the other minerals can be made out without the use of the lens.

The chemical analysis of a fragment of the meteorite made by Dr. Edgar Everhart, chemist of the Geological Survey of Georgia, is here given, together with the analyses of four other meteorites heretofore described which most closely resemble in chemical composition the Pickens County meteorite:

METEORITE ANALYSES

	Pickens Co., Georgia	Long Island, Kansas	Bluff, Texas	Shelburne, Ontario	Bjurböle, Finland
SiO_2	37.06	35.65	37.70	39.19	41.06
Al_2O_3	5.83	3.08	2.17	2.15	2.55
Fe_2O_3	10.69				
FeO	9.63	22.85	23.82	15.16	13.80
MgO	24.00	22.74	25.94	26.24	25.75
CaO	0.55	1.40	2.20	1.75	1.82
Na_2O	0.92	0.25		0.73	1.24
K_2O	0.02	0.03		0.22	0.32
H_2O		1.52			
TiO_2	0.09	trace			
P or P_2O_5	0.31	0.06	0.25	0.06	0.14
S	1.57	1.90	1.30	1.61	FeS 5.44
Cr_2O_3	0.40	6.33		0.62	0.59
NiO		0.77	1.59		0.07
CoO		0.06	0.16		
MnO	0.40	trace	0.45	0.12	0.12
Fe	8.22	2.60	3.47	10.70	6.38
Ni	1.23	0.67	0.65	0.78	0.72
Co	0.11	0.04	0.09	0.04	0.04
O for limonite	Cu 0.06	0.90			
	101.09	100.85	99.79	99.37	100.04
Less O = S	0.79	0.95	0.65		
Less O = P		0.10			
	100.30	99.80	99.14	99.37	100.04